UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 11 2000

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Information Concerning a Chemicals Buried at Cleanup Site in Ohio

FROM: Thomas Armitage
Standards and Applied Science Division
U.S. EPA Office of Water

TO: Jeanne Griffin
EPA Region 5

Larry Zaragoza of the Superfund Program recommended that I send you the attached package of information concerning buried tank cars of chemical waste at a site in Ohio. Mr. Russell Bimber, a concerned citizen who formerly worked for Diamond Shamrock, provided us with the attached information indicating that the company buried five railroad tank cars of 90% hexachlorobutadiene and 10% hexachlorobenzene at a landfill on the edge of Lake Erie.

Mr. Bimber believes that the Ohio EPA, which is currently overseeing an RI/FS at the landfill, has underestimated the hazard at the site. He is concerned that an environmental disaster could occur if the tank cars corrode and the material enters Lake Erie. Mr. Bimber sent the attached information to the Office of Water, and it was forwarded to us because our Division handles contaminated sediment issues. However, I believe that Mr. Bimber's issue should be handled by the Region 5 Superfund Program. Please call me at 202-260-5388 if you have questions.

Attachment

cc: Russell Bimber
Elizabeth Southerland
Larry Zaragoza

Non-responsive

Non-responsive

Non-responsive

July 2, 2000

To: Thomas N. Armitage
Risk Assessment and Management Branch
Office of Science & Technology, Mail Code 4305
401 M St., SW
Washington, D. C. 20460

Since I wrote you on 12/4/99, and returned your call on 12/10/99, my wife and I sold our home in Painesville and moved to a retirement community (Kendal at Oberlin). My new address and phone number are given above.

I previously discussed hexachlorobenzene (HCB) in a one acre hazardous chemical waste landfill on the edge of Lake Erie, within Diamond Shamrock's former Painesville (OH) Works, as a possible source of some of the HCB in Lake Erie Sediments. (It is within the Ashtabula-Chagrin segment of the Lake Erie sediments, which had a far higher HCB content than the segments east and west of it.)

Ohio EPA is overseeing the RI/FS Study of CERCLIS #OHD980611909, proposed 5/10/93, which is being done by Diamond's successor, Maxus Energy. (Maxus was bought by the Argentine oil and gas company, YPF, and it was merged into Repsol, of Spain.)

In 1981, Diamond Shamrock gave Ohio EPA numerous pages of internal 1968 memos which said burials began in 1965, and were limited to research wastes. These included a seven page list of materials buried up to that time. The 1981 cover letter apologized for the poor quality of the 1968 copies, and added 9 pages of materials buried from 1963 through 8/17/70. The latter included tankcars buried in 1964, and other obviously commercial scale wastes said to have been buried on 8/17/70. The seven and nine page lists are in Appendix J of the RI/FS documents prepared by Maxus and Ohio EPA.

I lost my copy of the seven page list, but agree it was only research wastes. A copy of the cover letter and the nine page list, with the obviously commercial scale wastes highlighted, is enclosed. The large tanks of chlorinated solvents on pages 3 and 7 concern me most, but the lists include about 200 drums of (crude?) hexachlorobutadiene (HCBD) and HCBD distillation bottoms (much richer in HCB) which are also significant

Diamond Alkali and Diamond Shamrock used to make tri-and tetra-chloroethylenes in Texas. This produced a higher boiling byproduct which was 85-90% HCBD and 10% HCB. It had no market. About 1960, the Pa Salt Co offerred $0.50/lb for all the HCBD Diamond could supply. All the accumulated crude HCBD was shipped to Diamond's Semiworks in Ashtabula (now Occidental Chemical) for distillation to give salable HCBD.

The order was cancelled before much was cleaned up. This seems to account for the five cars of HCBD Diamond reported burying on 11/4/64, and the many drums of HCBD and HCBD bottoms.

I claim Ohio EPA has underestimated the hazards of this one acre landfill, and that Maxus and Ohio EPA are misrepresenting the site as containing research wastes,"typically less than five gallon packages", with no mention of the thousands of 55-gallon drums and about ten large tanks which comprise three fourths of the weight of waste.

I have enclosed more information on the one acre landfill, and would welcome a chance to discuss it further.

Sincerely,

Non-responsive 7/2/2000

Non-responsive

5 ENCLOSURES

CERTIFIED M[illegible] RETURN RECEIPT REQUESTED - REC[illegible]T NO. P29 9885011

Russell M. Bimber

Non-responsive

Cover letter
9 pages list - see p 3 + p 7
Summary of both the
9 p list and
older 7 p list

Diamond Shamrock

September 30, 1981

Mr. Steve Tuckerman,
Ohio Environmental Protection Agency,
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087

Re: Diamond Shamrock Corporation
Painesville, Ohio,
One Acre Disposal Site

Dear Mr. Tuckerman:

As you requested, attached is an inventory of materials disposed of at the one acre site in Painesville, Ohio. Also, attached is a copy of "Operating Procedures" for disposal at this site dated March 15, 1968. My apology for the poor quality copy, but it was made from microfilm files.

If you have any questions, give me a call. I will contact you after I have talked to Bob Fragale in Columbus.

Sincerely,

DIAMOND SHAMROCK CORPORATION

John A. Licata

JOHN A. LICATA,
ENVIRONMENTAL MANAGER,
INTERNATIONAL TECHNOLOGY UNIT,
UNIT ENGINEERING AND
ENVIRONMENTAL AFFAIRS DEPARTMENT

JAL:ls
Attachment

One acre site Hazardous by Diamond Shamrock

Water Repellent

SW-71239 - Shipped 12/6/67

Material is a liquid consisting principally of perchloroethylene (65%) and aluminum stearate (27%) with the balance made up of additives (chrome complexes).

HCBD Still Bottoms

SW-71240 - Shipped 12/14/67

Distillation residues from purification of Hexachlorobutadiene. Bottoms are semi-solids containing principally Hexachlorobutadiene, Hexachlorobenzene, Trichlorobenzene.

Diablo 700X -Scrap

SW-71240 - Shipped 12/14/67

Off-grade product, liquid, containing 70% chlorine. Similar to Chlorowax 70, except Nonene is the base material.

Filtrate - Tetrachloro-p-xylene Process

SW-71240 - Shipped 12/14/67

Di and Tetrachloro-p-xylene dissolved in Varnolene solvent. Material is acidic and has a strong smell. Can slowly decompose releasing HCl. Material in drums is a semi-solid.

DION Polymercaptan

SW-71240 - Shipped 12/14/67

Scrap DPM is a viscous liquid material that cannot be incinerated. It is stable and not corrosive.

Filtrate - Hexachloro-p-xylene

SW-71240 - Shipped 12/14/67

Similar to filtrate from Tetrachloro-p-xylene except principal materials are tetra, tri, and hexachloro-p-xylene in Varnolene solvent. Can slowly decompose releasing HCl. Material in drums is semi-solid.

WASTE DISPOSAL

9/8/66	250#	Waste IPN & DAC 2787
9/29/66	750#	Waste IPN & DAC 2787
8/4/66	1200#	Waste IPN & DAC 2787
8/11/66	100#	Waste IPN & DAC 2787
8/11/66	350#	Scrap PVF Resin
8/18/66	1200#	DAC 2787 in sand blast residue
8/18/66	350#	Waste IPN & DAC 2787
8/25/66	200#	DAC 2787 in sandblast residue
8/25/66	400#	Scrap PVF Resin
7/6/66	200#	Waste IPN & DAC 2787
7/14/66	536#	Waste IPN & DAC 2787
6/2/66	50#	Scrap PVF Resin
6/9/66	250#	Waste IPN & DAC 2787
6/23/66	200#	Waste IPN & DAC 2787
6/30/66	150#	Waste IPN & DAC 2787
5/5/66	600#	PVF Resin
5/5/66	200#	Waste IPN & DAC 2787
5/5/66	100#	Alamine
5/13/66	350#	Waste IPN & DAC 2787
4/5/66	750#	Waste IPN & DAC 2787
4/5/66	300#	Diisoyanate Waste
4/8/66	125#	Waste IPN & DAC 2787
4/14/66	750#	Waste IPN & DAC 2787
4/29/66	1200#	Waste IPN & DAC 2787
3/3/66	200#	Carbon Catalyst
3/3/66	1000#	Waste IPN & DAC 2787
3/10/66	750#	Waste IPN & DAC 2787
3/17/66	1900#	Waste IPN & DAC 2787
3/24/66	800#	Waste IPN & DAC 2787
3/29/66	650#	Waste IPN & DAC 2787
2/3/66	250#	Waste IPN & DAC 2787
2/3/66	275#	Scrap PVF Resin
2/10/66	900#	Waste IPN & DAC 2787
2/17/66	1800#	Waste IPN & DAC 2787
2/24/66	800#	Waste IPN & DAC 2787
1/7/66	250#	Misc. Small Samples
1/13/66	175#	Waste IPN & DAC 2787
1/20/66	1800#	Waste IPN & DAC 2787
1/20/66	170#	Titanium Sponge
1/28/66	1500#	Waste IPN & DAC 2787
12/2/66	1500#	Waste IPN & DAC 2787
12/9/66	150#	Waste IPN & DAC 2787
12/9/66	125#	Scrap PVF Resin
12/16/66	225#	Waste IPN & DAC 2787
12/16/66	20#	Sodium Sulfohydrade
12/23/66	250#	Waste IPN & DAC 2787
12/30/66	30#	p-1-0-0
12/1/65	--	Month of November, no deliveries of waste material.
11/1/65	--	" " October, " " " " "
10/1/65	--	" " September, " " " " "
9/1/65	--	" " August, " " " " "

WASTE DISPOSAL

7/22/65	50#	Scrap PVF Resin
6/23/65	600#	Disodium Methane Arsenate
5/3/65	--	Month of April, no deliveries of waste material.
1/8/65	100#	Misc. small samples
1/14/65	100#	Polyacetyl waste
1/21/65	100#	Misc. small samples
1/28/65	450#	Misc. small samples
1/28/65	20#	Ethylene dichloride
1/28/65	50#	Polythi
1/28/65	50#	Methyl Methacrylate
1/28/65	20#	Dimethyl Formamide
2/4/65	75#	Misc. small samples
2/25/65	50#	p-1-0-1
2/25/65	250#	Diisocyanate waste
2/25/65	120#	Misc. samples
3/4/65	200#	Misc. samples
3/18/65	250#	Misc. samples
3/25/65	150#	Misc. samples
10/1/64	75#	Small samples
10/15/64	50#	Small samples
11/17/64	175#	Dimethyl Formamide
11/26/64	75#	Unreactive waste
12/--/64		Nothing to Coke Plant area.
12/22/64	8 Drums	Solid waste from the Dion Polysulfide Plant.
11/4/64	30 Drums	Hexachlorobutadiene
→ 11/4/64	5 Cars	Hexachlorobutadiene commercial scale
7/16/64	30#	Dichloro-p-Xylene
7/16/64	20#	Antimony Trioxide
8/20/64	500#	Hexachloro-p-Xylene
8/27/64	2500#	Hexachloro-p-Xylene
8/27/64	25#	Small samples
9/25/64	200#	Small samples
4/2/64	200#	Polyol samples
4/2/64	100#	Polymercaptan waste
4/2/64	100#	Broken glass
4/2/64	275#	Contaminated containers and trash.
4/7/64	750#	Polyol
4/7/64	95#	Small samples
4/7/64	200#	Contaminated container & trash.
4/9/64	90#	Drierite
4/9/64	25#	Polyol
4/9/64	100#	Contaminated trash
4/16/64	350#	Diisocyonate waste
4/16/64	2000#	Hexachloro-m-Xylene
4/16/64	500#	Diablo 700X
4/16/64	225#	Isophthaloyl Chloride
4/23/64	500#	Contaminated Transite
4/23/64	125#	Contaminated Trash
4/23/64	3000#	Polyol

WASTE DISPOSAL

5/7/64	100#	Misc. small samples
5/28/64	200#	Misc. small samples
5/28/64	75#	Hexachloro-m-Xylene
6/4/64	100#	Misc. small samples
6/18/64	350#	Herbicide
6/18/64	50#	Polythi waste
6/26/64	40#	DAC-1200
6/26/64	250#	Amberlite LA-2
6/26/64	50#	Orthodichlorobenzene
4/24/64	4 Drums	Scale Wax
4/24/64	3 Drums	Formaldehyde
4/24/64	1 Drum	Oleic Acid
4/24/64	3 Drums	Monoethanolamine
4/24/64	6 Drums	Methly Monochloroacetate
4/24/64	4 Drums	Neosapon CF-11 Waste
4/27/64	9 Drums	Acetone Waste
4/27/64	7 Drums	Methyl Monochloroacetate - Still Bottoms
4/27/64	6 Drums	Organic Waste
1/9/64	50#	Phosphorous Polyols
1/9/64	200#	Small samples
1/9/64	25#	Broken glass
1/9/64	100#	Contaminated containers
1/23/64	200#	TTD
1/23/64	300#	Misc. waste chemicals
1/23/64	20#	Phosphorous polyol
1/23/64	25#	Contaminated containers
1/30/64	200#	Contaminated trash
1/30/64	50#	Contaminated plastic hose
1/30/64	50#	Polyol
1/30/64	25#	DAC-559
2/13/64	125#	DAC 559
2/13/64	100#	Polyurethane foams
2/13/64	50#	Misc. small samples
2/13/64	75#	Broken glass
2/20/64	100#	Polythi
2/20/64	200#	DAC 559
2/20/64	125#	Misc. small samples
2/20/64	200#	Contaminated trash
2/20/64	50#	Broken glass
2/27/64	375#	DAC-559
2/27/64	150#	Misc. small samples
2/27/64	50#	Broken glass
2/27/64	50#	Misc. chemicals
3/5/64	250#	Misc. small samples
3/5/64	100#	Contaminated trash
3/5/64	75#	Contaminated plastic hose
3/5/64	100#	Contaminated containers
3/12/64	100#	Misc. small samples
3/12/64	75#	Broken glass
3/12/64	75#	Contaminated trash
3/18/64	75#	Polythi waste
3/18/64	100#	Small samples

WASTE DISPOSAL

3/18/64	50#	Broken glass
3/18/64	50#	Contaminated trash
3/25/64	100#	Polythi waste
3/25/64	75#	Contaminated trash
3/25/64	100#	Misc. small samples
3/25/64	100#	Used containers
10/4/63	250#	DAC-559
10/4/63	25#	Misc. small samples
10/11/63	2000#	Phosphorous polyol
10/18/63	100#	DAC-559
10/18/63	25#	Phosphorus polyol
10/18/63	100#	Misc. samples
10/18/63	50#	Antimony oxide
10/25/63	50#	Misc. samples
10/25/63	50#	Contaminated hose, plastic bags, & containers
10/31/63	15#	Phosphorous pentoxide
10/31/63	100#	Sump settlings
10/31/63	150#	Misc. small samples
11/7/63	100#	DAC-559
11/7/63	50#	Misc. chemical trash
11/7/63	20#	Samples
11/7/63	35#	Broken glass
11/14/63	50#	Misc. chemicals
11/14/63	50#	Broken glass
12/12/63	50#	Small samples
12/12/63	25#	Broken glass
12/19/63	50#	Contaminated containers & trash
9/26/63	2 Drums	MMCA Still Bottoms (methyl-monochloroacetate)
9/26/63	2 Drums	MMCA Esterifier Bottoms (methyl-monochloroacetate)
9/26/63	1 Drum	HCBD Bottoms - (Hexachlorobutadiene)
9/26/63	1 Drum	MMCA Samples - (Methyl-monochloroacetate)
6/19/63	12 Drums	M-141 - (2100#)
6/19/63	17 Drums	Misc. Solvents (55 gals.)
6/28/63	3 Cardboard Boxes	DAC-893 samples
6/28/63	3 "	Misc. chlorinated xylene samples
6/28/63	8 Cartons	Sodium CMC - (Carboxy-methylcellulose)
6/28/63	15 Cartons	DT Whitener
6/28/63	3 Cardboard Boxes	TTD
6/28/63	3 "	Dichlorophenol (samples)
6/28/63	1 Jug	Recovered Aniline
6/5/63	2 Drums	Waste Polyol (55 gals.)
6/5/63	1 Small Drum	Misc. hose, plastic bags, etc.
7/12/63	1 Drum	Waste DAC-559 (55 gals.) & used 559 bags
7/12/63	1 Carboy	(Plastic) waste polyol solvent
7/12/63	Several	Misc. waste solvents from "A" Bldg.
7/19/63	10 Cans	(Waste Polyol (5 gals.)
7/19/63	1 Drum	Waste Methylene Chloride from Polyol (25 gals.)

WASTE DISP[illegible]AL

7/19/63	1 Drum	Misc. hose, bags, etc.
7/19/63	Several	Misc. waste solvents from "A" Bldg.
7/25/63	2 Drums	Cyanuric Acid (145#)
7/25/63	1 Drum	$ClCl_3$ (20#) Should be $CrCl_3$ and it was in a 55 gallon drum — R. Bimber
7/25/63	2 Drums	Trichlorophenol (100 gals.)
7/25/63	500#	Ferrochrome Silica
7/26/63	100#	Di amino stilbine di sulfonic acid
7/26/63	15 Gals.	Polyether samples
7/26/63	1 Drum	Silicon
7/26/63	1 Drum	Alumina (150#)
7/26/63	7 Cans	Waste Polyol (5 gals.)
7/26/63	1 Drum	Misc. chemical trash (hoses, bags, etc.)
7/26/63	1 Drum	559 trash (bags, etc.)
8/2/63	1 Drum	Samples: Xylenes & derivatives (55 gals.)
8/2/63	1 Drum	Misc. chemical trash
8/9/63	1 Drum	Misc. Polyol samples
8/9/63	Several	Misc. waste solvents from "A" Bldg.
8/16/63	2 Drums	Waste Polyol (55 gals.)
8/16/63	Several	Misc. waste solvents from "A" Bldg.
8/16/63	1 Drum	Misc. chemical trash
8/30/63	1 Drum	Chlorinated PVC - (about 40#)
8/30/63	1 Drum	Misc. chemical trash
9/6/63	1 Drum	PVC-450 (100#)
9/6/63	50#	Sodium chloroacetate
9/6/63	10 Gals.	Misc. waste from "A" Bldg.
9/6/63	10#	Misc. small samples
9/6/63	1 Drum	DAC-559 - (40#)
9/6/63	1 Gal.	Ethylene Glycol
9/6/63	25#	KCl
9/6/63	25#	NH_4Cl
9/6/63	10#	Di bromo-sentane
9/6/63	10#	Zinc Chloride
9/6/63	25#	Dolomite
9/6/63	2 Gals.	Chloro still bottoms
9/6/63	Several	Misc. waste solvents from "A" Bldg.
9/20/63	50#	Photine C
9/20/63	120#	Refractory Cement
9/20/63	70#	Ammonium Sulfate
9/20/63	200#	Peraclase
9/20/63	300#	Caustic Soda (solid)
9/20/63	150#	Polyol✓
9/20/63	Several	Misc. waste solvents from "A" Bldg.
9/27/63	50#	Polyol mixture
9/27/63	1 Drum	(Part full) mostly water - coated with urethane
9/27/63	100#	DAC-559 waste (removed from drum by error)

WASTE DISPOSAL

6/13/63	17 - 55 Gal. Drums	Hexachlorobenzene (HCB) & Hexachlorobutadiene (HCBD)	
	580# to equal the Tons →		
8/17/70	341 - 380# Drums	CWX 500 (98.9 Tons)	} viscous chlorinated paraffins
"	117 - 525# "	CWX 40 (30.7 ")	
"	10 - 500# "	CWX 40LV (2.5 ")	
"	48 - 525# "	ECCl (12.6 ")	
"	In Process CCl_4 Materials	Crude -- 50% CCl_4, 50% S_2Cl_2	14,185 Gals.
"	" " " "	Settlings & residue -- 90% S_2Cl_2, 10% CCl_4	12,045 "
"	" " " "	Stripper Feed - 95% S_2Cl_2, 5% CCl_4	18,000 "
"	" " " "	Sulfur - several tons	
"	" " " "	Still Toppings - 84% CCl_4 4.5% $CHCl_3$ 6.4% CS_2	12,906 "

Commercial scale

Total 57,136 gal
× 14 lb/gal
799,904 lb
— whereas only 57,360 lb was assumed in the Hazard evaluation of this site.
— R. Bimber
7-2-2000

Russell M. Bimber

Non-responsive

WASTE DISPOSAL

6/25/70	200	55 Gal. Drums	DAC 2787
"	79	" " "	Safire & coal tar
"	53	" " "	Misc. Organic chemicals
"	29	" " "	Treated KOH
"	22	" " "	Polysulfide
"	14	" " "	Dichloroformal
"	13	" " "	PVC
"	9	" " "	PVP
"	6	" " "	Nopcoflex-3
"	5	" " "	Pesticide (DACTHAL herbicide)
"	5	" " "	THF
"	4	" " "	Analytical samples
"	4	" " "	Ethylene Dichloride
"	4	" " "	Silicate
"	4	" " "	Xylol
"	3	" " "	Polymercaptan
"	2	" " "	Acetone
"	2	" " "	Heptane
"	2	" " "	Mobilsol 66
"	2	" " "	Oil
"	2	" " "	Polyol
"	1	" " "	Ethylene Chlorohydrin
"	1	" " "	Isocyanate
"	1	" " "	Polymer solution
"	1	" " "	Sodium Hydroxide
"	1	" " "	Sodium Sulfide
"	1	" " "	Toluene
"	1	" " "	Trichlorobenzene
"	156	5 Gal. Drums	Misc. Organics
"	114	" " "	Sodium Polysulfide
"	11	" " "	Safire
9/22/69	12	55 Gal. Drums	Polyvinyl Fluoride
"	20	" " "	Treated KOH
"	53	" " "	DACONIL 2787 & Isophthalonitrile
"	19	" " "	Carbon Catalyst
"	10	" " "	Safire Waste
"	1	" " "	Caustic Potash
"	10	" " "	Polymercaptan
"	2	" " "	Trichloropropane
"	30	" " "	Misc. non-burnable organics
"	6	" " "	Polysulfide
"	2	" " "	Polyvinyl acetate
"	10	" " "	Spent Sulfuric Acid
"	8	5 Gal. Drums	Polyvinyl Fluoride
"	75	" " "	Polysulfide
"	22	" " "	Misc. non-burnable organics

WASTE DISPOSAL

5/20/69	146 -	55 Gal. Drums	Daconil 2787
"	17 -	" " "	Dion Polymercaptan
"	4 -	" " "	Analytical Samples
"	33 -	" " "	Organic Solvents
"	6 -	" " "	Carbon Catalyst
"	2 -	" " "	PVF
"	24 -	" " "	Treated KOH
"	1 -	" " "	Sodium Sulfhydrate
"	3 -	" " "	Perchloroethylene Water Repellent
"	2 -	" " "	CrO_3-t-Butanol
"	1 -	" " "	Toluene with Polymercaptan
"	6 -	" " "	Safire
"	1 -	" " "	Acrylic Latex Waste
"	1 -	" " "	Chromic Acid Waste
"	5 -	" " "	2,4 - Dichlorophenoxy
"	10 -	5 Gal. Cans	Chlorinated Xylene Waste
"	2 -	" " "	Oil Waste
"	30 -	" " "	Organic Waste
"	1 -	" " "	Dimethylformamide
"	29 -	" " "	Dion Polymercaptan
"	33 -	" " "	Organic Solvents
"	18 -	" " "	PVF
"	2 -	" " "	CrO_3-t-Butanol
"	2 -	" " "	Safire

Russell M. Bimber

Non-responsive

Additional Notes Related to Disposal Inventory:

1.) Waste IPN and DAC 2787
IPN - Isophthalonitrile; DAC 2787 is a product which contains IPN as the active agent. IPN is the active agent and is registered as an EPA PESTICIDE under FIFRA.

2.) PVF - Polyvinyl Fluoride

3.) DAC - 599 Internal Research Project Code. Referring to research project wastes.

4.) PVC - Polyvinyl CHLORIDE RESIN.

5.) CWX - refers to trade name Chlorowax products which are chlorinated wax materials.

6.) SAFIRE - Trade name for a sodium silicate solution product.

notes 1+3 are incorrect. The active pesticide (fungicide) in DAC 2787 (which should contain little or no IPN) is tetrachloroisophthalonitrile. It is made from IPN. DAC 559 (not 599) is N,N',N'',N'''-tetrachloroglycoluril, a pure chemical sold as a dry bleach.

Non-responsive added after 6-1-95

Part II

Hazardous Chemical Landfill

Ohio EPA is currently representing USEPA in investigating the former Diamond Shamrock Painesville Works as a proposed Superfund Site. Liability for this site currently resides with the Maxus Energy subsidiary of the Argentine oil company, YPF.

Ohio EPA recently put a Remedial Investigation/Field Study Plan in local libraries. The RI/FS cites only laboratory wastes-- typically less than five gallon packages-- having been buried in a one acre hazardous chemical landfill 200 feet from Lake Erie. I learned how close the landfill was to the Lake when Ohio EPA stepped up its study in 1995. Ohio EPA let me copy Diamond reports on the landfill from their files. Those reports show half the weight of waste buried here is from full commercial scale operations and a quarter is from semicommercial operations. Only a quarter was laboratory waste.

Ohio EPA seems to be trying to avoid confronting the problem, so I want the International Joint Commission to know what Diamond Shamrock told EPA it buried from 1963 through 1970. After studying sixteen pages of often vague lists, I offer this brief list of the principal wastes in the landfill:

Chemicals (liquids, except as noted)	Pounds
Hexachlorobutadiene & (less) Hexachlorobenzene	842,500
Carbon Tetrachloride and Sulfur Dichloride	750,000
Chlorinated paraffins (viscous, sticky)	295,000
IsoPhthaloNitrile and tetrachloro-IPN (solid)	272,000
Polymercaptan and polysulfide sealants (solid)	157,000
Mixed organic solvents (acetone and xylene rich)	140,000
Tetrachloroethylene	54,000
Chlorinated xylenes (Mostly solid, hexachloro-m- & p-)	50,000
Methyl Chloroform (1,1,1-trichloroethane)	30,000
Total of hundreds of smaller quantity wastes, both solid and liquid	0.5 to 1.0 million
Overall total	3.0 to 3.5 "

I believe I can understand Diamond's records on this landfill as well as anyone, because I was employed by Diamond Alkali, Diamond Shamrock, and successor companies as a pesticide research chemist from 1952 through 1991, when I retired at my own choice.

Non-responsive

Thank you for your attention.

Non-responsive

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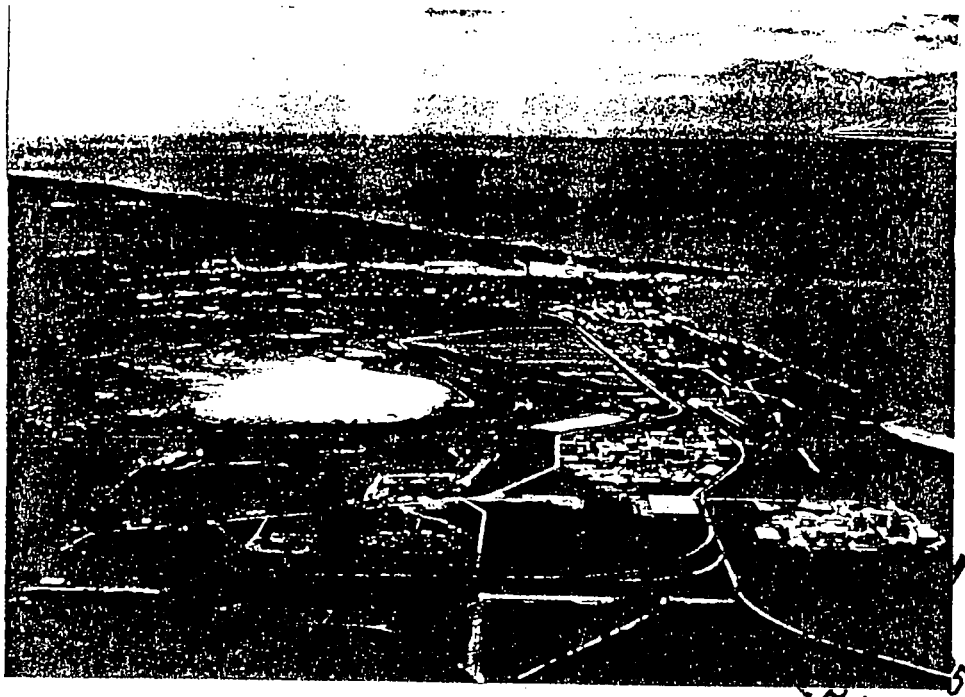
Questions and Answers

about the

Diamond Shamrock Painesville Works Site

Executive Summary



The Ohio Environmental Protection Agency
March 16, 1995

Milk of Lime Pond

- Waste deposited in this area included chromium, potassium dichromate, hexavalent chromium, sulfur dioxide, pickle liquor, and other wastes.

- This area was also covered over during the capping of Waste Lake #2 and the cap in this area also does not meet current Solid Waste standards for municipal landfills.

Grand River and Lake Erie

- Both bodies of water have received untreated wastes from the site directly through outfalls.

- These wastes included hexavalent chromium, as well as other toxic and/or hazardous wastes.

One-Acre Landfill

- Operated as a hazardous waste disposal area from 1963-1970.

- Was not constructed according to even current Solid Waste standards - **no liner exists under the wastes and the cap over the waste does not meet even municipal landfill requirements.**

- Contains research wastes from the Diamond Shamrock Fairport, Chardon, Ashtabula, and Concord Township research facilities.

- More than 900 drums and 5 railroad tank cars have been disposed of within the landfill.

- Many of the chemicals placed in the landfill are highly toxic and/or dangerous. These include, but are not limited to, the following:

CANCER-CAUSING CHEMICALS

PERCHLOROETHYLENE
CHROMIUM AND CHROME COMPOUNDS
HEXACHLOROBUTADIENE
HEXACHLOROBENZENE
DISODIUM METHANE ARSENATE
TRICHLOROPHENOL (can also turn into dioxin with addition of heat)

MUTAGENIC CHEMICALS (CAUSE BIOLOGICAL MUTATIONS):

TOLUENE
XYLENE
DIMETHYL FORMAMIDE

CHLORINE

TERATOGENIC CHEMICALS (CAUSE FETAL MALFORMATIONS):

DISODIUM METHANE ARSENATE
TRICHLOROBENZENE
TOLUENE

POISONOUS CHEMICALS

CYANATES (CYANIDE FUMES)
DISODIUM METHANE ARSENATE (ARSENIC FUMES)
ANTIMONY TRIOXIDE
PHOSPHORUS PENTOXIDE
ANILINE
TRICHLOROBENZENE
CHLORINE
MERCAPTANS (SULFUR FUMES)

FLAMMABLE/EXPLOSIVE CHEMICALS:

METHYL METHACRYLATE (spontaneous explosive)
TOLUENE
XYLENE
HEPTANE
ACETONE
POLYOL (SOLVENT)
WASTE SOLVENTS
METHYLENE CHLORIDE
DIMETHYL FORMAMIDE

- Waste was disposed of in trenches and covered over with soils.

- Leachate from the landfill is a hazardous waste under Ohio law.

- Shoreline erosion of Lake Erie continues to threaten the landfill.

  * Current figures from the Ohio Department of Natural Resources (ODNR) show that Lake Erie, in the vicinity of the landfill is eroding at a rate of almost **5 feet per year** (see Attachment D).

  * While anti-erosion measures taken by Maxus Energy have slowed shoreline erosion, it appears that erosion to the west of the established barrier is eating into the bank and natural progression will eventually lead to encroachment of Lake Erie onto the landfill.

* This area continues to be unstable geologically and **only approximately 50 feet remains between the landfill and Lake Erie** (see Attachment E).

EXPOSURE RISKS AND RELEASES

While it is the duty of the Ohio Department of Health (ODH), through an agreement with the Agency for Toxic Substances Disease Registry (ATSDR), to assess human health risks posed by the Diamond Shamrock site, the Ohio EPA does assess exposure and potential exposure when determining site priority.

On-site releases have occurred to **all** media -- soil, surface water, groundwater, and air. These releases place residents of the area and people working or playing on-site at risk. The following is a discussion of the risk these media pose:

Soil Releases:

- Soil samples collected from Waste Lake #2 prior to capping revealed concentrations of chromium of 16,900 ppm and 14.40 ppm lead.

- On 3/16/88, during ACO sampling, muddied green snow was found around monitoring wells, suggesting that purge water was not drummed as required by the ACO, but was disposed of on the surface - This purge water contained high levels of hexavalent chromium.

- A strong possibility exists that wastes buried within the One-Acre Landfill has been released to surrounding soils.

- A strong possibility exists that liquid wastes place into Waste Lakes were released into the surrounding soils.

- In 1984 Ohio EPA sampling documented a release of chrome-contaminated iron oxide filings and coke tar decanter sludge (K087) waste to soils on the former Erie Coke & Chemical property.

- Sampling performed by the Lake County Commissioners in January 1995 shows above levels on chromium in soils on their property.

- Due to unrestricted access to the majority of the site, both the local population and on-site workers are at risk for exposure to hazardous wastes.

Surface Water Releases:

- Grand River

  - Ohio Water Quality violations for hexavalent chromium have been continuously occurring in the Grand River, even after capping of Waste Lake #2 (See Attachment C).

  - Leaching of dissolved solids from Waste Lake #4 have also lead to Ohio Water Quality violations in the Grand River.

  - Hexavalent Chromium, chromium, cadmium, lead, bis(2-ethylhexyl) phthalate, arsenic, mercury and other chemicals which have been found on site have also been found in the sediments of the Grand River.

  - Chromium and Cadmium, both known site contaminants, have been found in Grand River fish adjacent to the site.

  - Because of the heavy recreational use of the Grand River for purposes including fishing and boating, the local population is at risk of exposure to site contaminants (See Attachment F).

  - In addition, because the Grand River drains into Lake Erie, site contaminants may enter Lake Erie via that route and could potentially contaminate the drinking supply for the surrounding area.

- Lake Erie

  - Limited work has been done regarding sediment analysis in Lake Erie in the vicinity of the Diamond Shamrock site, however it is known that Painesville Plant surface runoff did enter Lake Erie directly through an outfall and that this runoff most likely contained chromium as well as other site contaminants.

  - A strong possibility exists that contaminants placed in the One-Acre Landfill and production area have migrated into Lake Erie.

  - Due to the recreational use of Lake Erie, as well as its use as a water supply, the local population is at risk for exposure to on-site contaminants.

Groundwater Releases:

  - Samples collected during USEPA ACO sampling shows significant releases of hexavalent chromium to groundwater in the vicinity of Waste Lake #2 (see Attachment G).

- Samples collected in January 1995 by the Lake County Commissioners show that shallow groundwater contains contaminants which can be related to Diamond Shamrock site activities including: chromium, lead, arsenic, bis (2-ethylhexyl) phthalate, and toluene.

- A strong possibility exists that contamination has been released from the waste lakes, production area, and One-Acre Landfill into the groundwater. Groundwater in this area is connected to both Lake Erie and the Grand River.

- The local population, through both recreational activities in Lake Erie and the Grand River and through drinking water, are at risk for exposure to on-site contaminants.

Air Releases:

- The potential exists for a release of asbestos from uncapped waste lakes.

- The Ohio EPA has documented evidence of a release of potentially hazardous chemicals due to demolition activities performed on site by National GG Industries contractors.

- Both the local population and on-site workers and trespassers are at risk to exposure of contaminants via the air pathway.

TECHNICAL CONCLUSIONS

Significant on-site contamination exists both from Diamond Shamrock site activities and the activities of others. Risk of exposure to both the human population and the environment exists at this site. In order to identify and alleviate this risk, the Ohio EPA has chosen the most cost efficient method at its disposal, namely the issuance of administrative orders on consent to perform a Remedial Investigation and Feasibility Study.

U.S. EPA HRS LISTING PACKAGE

U.S. EPA routinely performs preliminary assessments on sites that are listed on its "CERCLIS" listing (a list of known disposal sites nationwide), and goes on to complete HRS scoring packages for those sites that warrant such activity based on the initial examination. This Site very likely was continued through the process because documented releases to the environment of hazardous substances exist. Because Ohio EPA did not prepare the Hazard Ranking Scoring package, we do not feel that we can offer additional information on the listing package. However, it is clear to the Ohio EPA that this Site poses numerous risks that have not to date been fully identified or addressed.

The U.S. EPA scoring package identified and scored only one pathway for contamination, the surface water pathway. However, as described herein, there have been documented releases of contaminants to surface water, ground water, air and soil. Many questions have focused on the disposal area known as the "One-Acre Landfill" and while that is an obvious area of concern to the Agency as well, we also plan to investigate all disposal and industrial areas contained in the Site. It is the intention of the Ohio EPA to investigate all affected environmental media, and determine the best course of any future action.

IS VOLUNTARY ACTION APPROPRIATE AT THE DIAMOND SHAMROCK SITE?

The Ohio Voluntary Action program took effect in September of 1994. The goal of this program is to allow landowners and others to clean up and promote the productive reuse of industrial property. That is also our goal at this Site and others in the State where we are involved in an enforcement action for investigation and cleanup. Our enforcement choices are driven by threat to human health and the environment, and we focus our enforcement activities on Sites we believe present the greatest threat.

The Voluntary Action Program statute addresses the issue of site eligibility by precluding certain kinds of sites from participation in the program. One such preclusion draws the line between sites the Ohio EPA will focus its efforts on cleaning up and those sites that choose to volunteer. This line is drawn in a manner that will maximize the number of cleanups in Ohio and most efficiently use State resources at sites that have initiated voluntary cleanup. Specifically, sites which receive a request from the Director to negotiate an enforcement order for cleanup may only opt out of the enforcement process if sufficient evidence is presented to the Director of Ohio EPA that the Voluntary Action Program has been entered into and that the responsible party is moving expeditiously to address the threat. The statute further specifies that such presentation must minimally include the existence of a contract with a certified professional to respond to the threat and the availability of adequate financial resources to do so.

Responsible parties for the Diamond Shamrock Site have not provided any documentation to the Agency to indicate that the site is being appropriately addressed through the Voluntary Action Program. We have no documentation to support that Diamond Shamrock has entered into a contract with a Certified Professional and have no information to indicate that the responsible parties are moving expeditiously towards cleanup. Consequently, the Site does not qualify for the Voluntary Action Program and cannot address the environmental conditions under that program.

The size and diverse nature and ownership of this Site make it difficult to foresee how any voluntary action might work to insure that risk is identified and reduced. Because no single entity

Russell M. Bimber

Non-responsive

SKOW
STEVE
FILE

ODNR

Ohio Department of Natural Resources

DIVISION OF WATER
Fountain Square • Columbus, Ohio 43224 • (614) ~~466-4785~~ 265-6717

May 14, 1982

Mr. Charles Wilhelm, Chief
Div. of Hazardous Materials Management
Ohio Environmental Protection Agency
361 E. Broad St.
Columbus, OH 43215

RE: Diamond Sharmock Hazardous Waste Site, Lake County

Dear Mr. Wilhelm:

I am writing to call to your attention a one-acre hazardous waste site on the shoreline of Lake Erie, located close enough to the bluff to require erosion control measures. The Diamond Shamrock site is on the Lake County shoreline which has been experiencing severe erosion and shoreline recession. The historical rates for shoreline recession are 3 to 5 feet per year in this area, but with lake levels now higher than normal, the recession rates probably exceed this. The western corner of the landfill is approximately 50 feet from the bluff and the eastern corner is approximately 100 feet from the bluff. The problem, therefore, is a secure landfill containing hazardous materials located in a high risk erosion hazard area. For the short term, recently-installed erosion control structures may secure the area. For the long term, however, more permanent erosion control measures must be installed or materials in the landfill should be removed because of continual shoreline recession.

The Office of Chief Engineer in the Ohio Department of Natural Resources (ODNR) is the shore erosion agency for the State of Ohio, Chapter 1507 of the Revised Code. As such, this Office has expertise in the design and construction of shore erosion control measures. The Division of Geological Survey, ODNR, has conducted extensive research in Lake County on shore recession rates and erosion processes. Both offices would accept an invitation to visit the site and provide technical assistance relative to the erosion control measure at the site.

Concerning the recently-constructed erosion control measure, all structures built to control shoreline erosion along Lake Erie require a permit from the Office of Chief Engineer, ODNR (Section 1507.03 of the Revised Code). If the erosion control measure is constructed in the waters of Lake Erie, a lease must be obtained from the Ohio Department of Administrative Services, Section 123.031 of the Revised Code. If the structure involves the navigable waters of Lake Erie, a permit must be obtained from the Corps of Engineers, Section 10 of the River and Harbor Act and/or Section 404 of the Clean Water Act. Neither the Corps nor the Office of Chief Engineer has a permit application for the recently constructed erosion control measure, but we have brought the structures to their attention.

If I can be of further assistance to you on this matter, please contact me or Dick Bartz at (614) 265-6730.

Sincerely,

JOHN H. COUSINS
Chief

JHC/ww

cc: James Swartzmiller, Office of Chief Engineer, ODNR
Dr. Charles Carter, Division of Geological Survey, ODNR
Fred Mueller, Corps of Engineers
John Licata, Env. Mgr. Diamond Shamrock Corp.

----------added 9/23/98 by Russell Bimber----------

Remediation of the one acre site by landfill containment or removal of hazardous chemicals for commercial disposal was considered by Woodward-Clyde Consultants, in WCC File No 85C6322, for Diamond Shamrock Corp, of Dallas, TX, Oct 1986.

Containment would be relatively cheap, but removal was expected to yield 103,500 gallons of organic liquids needing to be incinerated, 2,700,000 gallons of contaminated water which would have to be cleaned up before release, or disposed through commercial waste management firms, and 1000 cubic yards of solid wastes or highly contaminated soil which would require incineration, and 39,600 cubic yards of less contaminated soil assumed acceptable for landfilling in a secure location, at a cost of $23,000,000.

information from Ohio EPA files

Diamond proceeded quickly with the containment option, even though federal guidance advises removal of the chlorinated solvents in large tanks before containment (40 CFR Ch.1, part 300.430 (iii) (A)-(D)). I don't believe any governmental approval was sought or obtained before proceeding with containment.

I believe it may still be possible to pump out most of the 107,000 gallons of chlorinated solvent mixtures Diamond reported burying in large tanks, such as five tankcars (est. 10,000 gallons each, like an abandoned tankcar still in the middle of the former plant). This would cost much less than recovering a much larger volume of soil for incineration at a later date.

Russell Bimber

Diamond Shamrock

OVER

Diamond Shamrock Corporation
T. R. Evans Research Center
P. O. Box 348
Painesville, Ohio 44077
Phone: 216 ~~867-3137~~ → ~~352-1680~~ → Non-responsive
RETIRED

Russell M. Bimber
Research Associate
Process Development

Non-responsive
Non-responsive

July/August 1997

FOCUS

International Joint Commission

Findings and Results

PAGE 8

The **Great Lakes Binational Toxics Strategy** was signed on April 7, 1997 by U.S. Environmental Protection Agency Administrator Carol Browner and Canadian Minister of the Environment Sergio Marchi. This agreement to undertake a coordinated effort to rid the Great Lakes of toxic chemical pollution was signed during Canadian Prime Minister Jean Chrétien's three-day visit to Washington, D.C. to meet with U.S. President Bill Clinton. It responds to recommendations for a binational toxics strategy that the International Joint Commission has made for more than a decade.

In keeping with the goals of the Great Lakes Water Quality Agreement -- to restore and protect the Great Lakes -- this strategy includes a commitment by the two governments to continue on their path towards virtual elimination of persistent toxic substances resulting from human activity, as well as placing a primary emphasis on pollution prevention.

Non-responsive

Non-responsive

July 2, 2000

Non-responsive

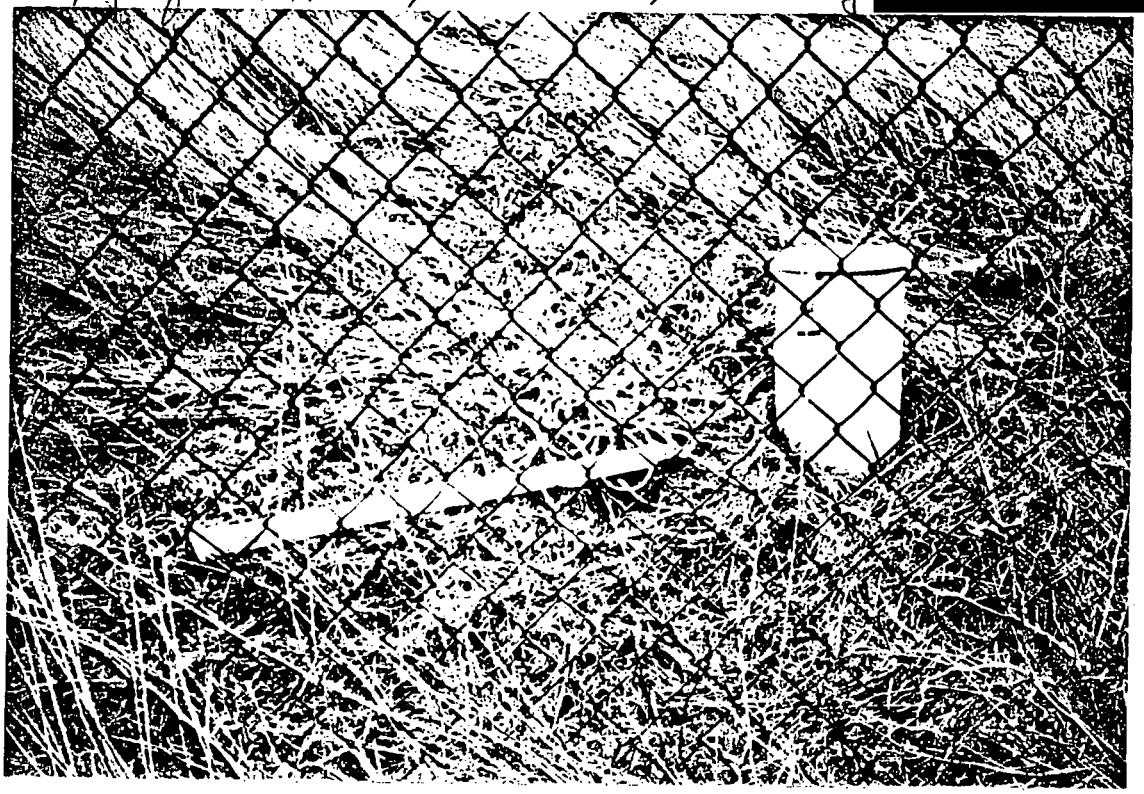
From the www:
http://www.epa.gov/bns/baphcb/stephcb.html

Binational Toxics Strategy-Canada and US

Draft Report on hexachlorobenzene (HCB) (28pp)
In response to the BNS challenge, "Seek by 2006, reductions in releases that are within, or have the potential to enter the Great Lakes Basin, of HCB from sources resulting from human activity."

R. Bimber believes Ohio EPA has erred in trusting rope bailer samples of the uppermost water in silted-in wells around Diamond's one acre hazardous waste site to reveal whether dense chlorinated solvents are carrying HCB from the site into Lake Erie.He believes only samples of water or fine sediment from Lake Erie must be analyzed. In August 1999, Ohio EPA admitted no lakewater or sediment from near the site had been analyzed.

Copy of a 4/1/95 rope bailer photo by Non-responsive



Non-responsive [redacted]

z. Fish tissue samples were found to contain levels of 4,4'-DDE, Endrin aldehyde, bis (2-ethylhexyl) phthalate, chromium, mercury, PCB-1260, cadmium, Heptachlor epoxide, Di-n butyl phthalate, dieldrin, 4,4'-DDT, 4,4'-DDD, and PCB-1254. Results of fish tissue analyses have been sent to the Ohio Department of Health for interpretation.

aa. Diamond Shamrock altered the course of the Grand River during the mid-1930s. An oxbow which existed to the south of the Chromium Plant was filled with waste, as was the old river channel, which meandered through Waste Lake #3.

bb. From 1963 until 1970 Diamond Shamrock operated the One Acre Site for disposal of research wastes from their research laboratories in Fairport, Chardon, Ashtabula and Concord Township. Over 900 drums and 5 railroad tank cars have been buried within the landfill. Waste was buried in trenches excavated 15 to 20 feet deep and 8 to 10 feet wide. Wastes include: methyl methacrylate, diisocyanate wastes, hexachlorobutadiene, polymercaptan wastes, orthodichlorobenzene, formaldehyde, cyanuric acid, trichlorophenol, xylene, caustic soda, hexachlorobenzene, pesticides and herbicides, polymercaptan, acetone, heptane, isocyanate, caustic potash, toluene with polymercaptan, chromic acid wastes, and chlorinated xylene wastes.

cc. In 1988 Maxus Energy voluntarily initiated slurry wall construction and leachate collection system installation at the One Acre Site. The leachate, which is hazardous, is disposed of periodically by a licensed hazardous waste hauler. In addition, Maxus Energy also installed a shoreline stabilization system to prevent further erosion of the Lake Erie shoreline. The One Acre Site is located immediately adjacent to Lake Erie and without shoreline stabilization the site would have eroded into Lake Erie.

From a 2/10/95 DRAFT of the Ohio EPA Director's Final Findings and Orders related to the former Diamond Shamrock Painesville Works - a Superfund Site

1995-97 PRIORITIES GLWQA IJC Sept '97 ISBN1-895-085-

3.3.4 Synopses of Background Reports

Atmospheric Transport and Deposition of Persistent Toxic Substances to the Great Lakes (IAQAB)

Since 1987, the significance of the atmospheric pathway for several contaminants, including PCBs, mercury and lead, has been well established by IJC and others. As one of its principal activities under IJC's priority on transport of persistent toxic substances to the Great Lakes basin, IAQAB commissioned a review (Cohen et al. 1997) of the state of the science regarding the emission, transport and deposition of Level I and Level II contaminants listed in the Great Lakes Binational Toxics Strategy. The strategy is focusses on approximately 27 compounds or classes of compounds as shown in Table 4 (Environment Canada and U.S. Environmental Protection Agency, 1997); 11 of the 12 Level I Substances were identified by WQB as critical pollutants in 1985. The review performed by Cohen and colleagues addressed:

- the capacity of substances to participate in long range atmospheric transport;
- the use of emissions inventories in identification of major sources and source regions;
- the use of modelling of transport and deposition initiatives to identify and verify pathways; and
- the use of ambient monitoring in quantifying deposition and verifying pathways.

Examination of physical and chemical properties of the strategy pollutants was a significant undertaking, as several are families of compounds, (such as the 209 congeners of PCBs), each with distinct properties. Cohen and colleagues determined that uncertainties and gaps in physical, chemical and/or atmospheric fate data for many of these substances limit the application of modelling and deposition determination techniques to these pollutants.

The potential of individual compounds for long range transport was assessed through consideration of evidence of emissions to the air; indirect indications of transport (such as detection at remote, isolated locations); and a determination of theoretical atmospheric lifetime, including consideration of physical/chemical properties, reactions in the atmosphere and deposition processes. Cohen's ranking (Table 5) indicates several contaminants have a global reach; others could be considered more continental, regional or subregional. Compounds with the longest atmospheric lifetimes include the chlorobenzenes, hexachlorobutadiene and elemental mercury. For these compounds, and possibly several others (e.g. DDT, mirex, hexachlorocyclohexanes, octachlorostyrene, and many of the PCBs), a global accounting may be necessary.

Table 4 **Persistent Toxic Substances (Level I and Level II) Identified in the Great Lakes Binational Toxics Strategy**

Critical pollutants identified by WQB in 1985 are indicated with an asterisk (*)
Persistent organic pollutants from CEC Council Resolution #95-5 are identified with a caret (^).

LEVEL I	LEVEL II
Aldrin ^ Dieldrin *^ Benzo(a)pyrene {B(a)P} * Chlordane ^ DDT, DDD, DDE *^ Hexachlorobenzene (HCB) *^ Alkylated lead * Mercury * and its compounds Mirex *^ Octachlorostyrene PCBs *^ Dioxins (PCDD; 2,3,7,8-TCDD) *^ Furans (PCDF; 2,3,7,8-TCDF) *^ Toxaphene *^ *NOTE: Hexabromobiphenyl and Pentachlorophenol are listed as POPs on the CEC Council Resolution #95-5 but are not included on the Strategy list.*	Cadmium and its compounds 1,4-Dichlorobenzene 3,3'-Dichlorobenzidine Dinitropyrene Endrin ^ Heptachlor and heptachlor epoxide Hexachlorobutadiene Hexachloro-1,3-butadiene Hexachlorocyclohexane (including alpha, beta, delta, lindane) 4,4'-Methylenebis(2-chloroaniline) Pentachlorobenzene Pentachlorophenol Tetrachlorobenzene (1,2,3,4- and 1,2,4,5-) Tributyl tin Polycyclic aromatic hydrocarbons (PAHs) ^ as a group, including but not limited to: Anthracene Benzo(a)anthracene Benzo(g,h,i)perylene Perylene Phenanthrene